CONFERENCE PROGRAM

THE 7th INTERNATIONAL CONFERENCE ON ADVANCED CONCEPTS IN MECHANICAL ENGINEERING
- DIMITRIE MANGERON JUBILEE -

ACME2016

JUNE 9 – 10, 2016
IAŞI, ROMANIA



Organized by:

FACULTY of MECHANICAL ENGINEERING

THE "GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IASI

and

AMIS - Faculty of Mechanical Engineering Alumni Organization

Under the aegis of:

Romanian Ministry of National Education and Scientific Research
Romanian Academy of Technical Sciences
Academy of Romanian Scientists

In partnership with:

SIAR - Society of Automotive Engineers of Romania
ARoTMM - Romanian Association for Mechanisms and Machine Science
SROMECA - Romanian Association of Mechatronics

ADVANCED CONCEPTS in MECHANICAL ENGINEEERING

"GHEORGHE ASACHI" TECHNICAL UNIVERSITY OF IAŞI - FACULTY OF MECHANICAL ENGINEERING

CONFERENCE PROGRAM OUTLINE

Thursday, June 9, 2016

09:00 – 10:00 Participants registration

10:00 – 10:30 Welcome, Opening Addresses

(Dean, Rector, Conference President, Honorary President)

10:30 – 12:00 Plenary Session (University Conference Hall)

1. **Dimitrie Mangeron Jubilee**
   C Oprişan
2. **SIAR – present and future projects**
   A Clenci
3. **Tactile sensors. Industrial, robotic and medical applications**
   P S Girao
4. **Static and dynamic performances of refrigerant-lubricated foil bearings**
   B Bou-Saïd

12:00 – 14:00 Lunch Break

14:00 – 16:00 Sections Session (for location, see detailed program)
Poster Session

(Faculty of Mechanical Engineering – IMMR Dept., 1st floor)

16:00 – 16:30 Coffee Break

16:30 – 18:00 Sections Session

19:00 – 24:00 Conference Gala Dinner
(**Chopin-Vivaldi** Rooms at Palas Conference Center)

Friday, June 10, 2016

09:00 – 10:30 Sections Session (where required)

10:30 – 11:00 Coffee Break

11:00 – 12:30 Sections Session (where required)

12:30 – 12:45 Conference Closing Ceremony

12:45 – 14:30 Lunch



1906 – 1991

Academy member Dimitrie I. Mangeron

– 110 years from birth –

Professor Dimitrie Mangeron probably represents the most famous person from local university and academic life, especially due to his scientific work, strongly connected to the requirements of high level technical education. He was an active member of several scientific societies of mathematics, theoretical and applied mechanics, and astronomy. The distinguished professor was doctoral advisor for more than 30 PhD theses in the field of technical mechanics.

An important legacy is related to the Bulletin of the Iaşi Polytechnic Institute (1946), being a founding father along with other famous scientists and Nobel Prize winners, and contributing to its dissemination on national and international level.

His main scientific research area was concentrated in Partial Differential Equations, with an impressive number of publications in prestigious journals. Today there are mathematical tools named Mangeron polyvalent equations, Mangeron interpolation operators, Mangeron theorems and Mangeron equations.

Professor Dimitrie Mangeron was member of Faculty of Mechanical Engineering in Iaşi Polytechnic Institute, teaching Theoretical Mechanics and Higher Mathematics from 1948 to 1976.

His valuable scientific activity was acknowledged internationally, being included in numerous societies and committees. In 1990, The Romanian Academy extended a correspondent membership, as a recognition of his distinguished professional career.

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Geert De CUBBER	Royal Military Academy of Brussels, BE

Session ACME-01-01: Machine Design

Thursday, 9 June, 2016

Chairmen: *Prof. Valeriu DULGHERU* and *Prof. Niculae GRIGORE*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-01	**The bearing capacity of the assemblies through compression with intermediate biconical elements** N Grigore, I Nae	14.00 - 14.15	M3
2	1-24	**Elaboration and research of planetary precessional multiplier Type K-H-V** I Bostan, V Dulgheru, R Ciobanu	14.15 - 14.30	
3	1-25	**Vibroacoustical diagnosis of planetary precessional kinematical transmission** I Malcoci, I Bodnariuc	14.30 - 14.45	
4	1-26	**Correlation of composite material test results with finite element analysis** M Guțu	14.45 - 15.00	
5	1-27	**Characteristics of materials and thermal treatments applied to gearwheels obtained by plastic deformation** I Bostan, V Dulgheru, N Trifan	15.00 - 15.15	
6	1-42	**Vibration diagnosis of an exhaust fan** I Damian, V Paleu	15.15 - 15.30	
7	1-06	**Study regarding the deterioration origin of thermomechanical contact fatigue** O F Tudose-Sandu-Ville	15.30 - 15.45	

COFFEE BREAK: 15.45 – 16.15

Session ACME-01-02: Machine Design

Thursday, 9 June, 2016

Chairmen: *Prof. Spiridon CREȚU* and *Prof. Traian CICONE*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-40	**Analytical and finite element simulation of a three-bar torsion spring** M Rădoi,T Cicone	16.15 - 16.30	M3
2	1-09	**Manufacture of threads with variable pitch by using noncircular gears** L Slătineanu, O Dodun, M Coteață, I Coman, G Nagîț, I Beșliu	16.30 - 16.45	
3	1-19	**The determination of the operation parameters at the axial hydraulic turbine** A I Simedru	16.45 - 17.00	
4	1-14	**Study on the construction of the shaft used in naval propulsion** F Kmen, S Macuta	17.00 - 17.15	
5	1-30	**The effect of primary loading on fatigue life of cylindrical roller bearings** S S Crețu	17.15 - 17.30	
6	1-31	**The role of roughness amplitude on depth distribution of contact stresses** A Tufescu, S Cretu, M R Balan	17.30 - 17.45	
7	1-39	**A case study on relation between roughness, lubrication and fatigue life of rolling bearings** M R Balan, A Tufescu, S S Cretu	17.45 - 18.00	

Session ACME-01-03: Tribology

Thursday, 9 June, 2016

Chairmen: *Prof. Benyebka BOU-SAÏD* and *Prof. Lorena DELEANU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-44	**Tribological characterisation of UHMWPE used in dual mobility total hip prosthesis** I Essefi, H Hakkouna, G Ouenzerfi, G Mollon, S. Hamza, E Renault, Y Berthier, A-M Trunfio-Sfarghiu	14.00 - 14.15	**103**
2	1-45	**Characterization of cell cultures in contact with different orthopedic implants biomaterials** G Ouenzerfi, A Hannoun, M Hassler, L Brizuela, S Youjil, C Bougault, A-M Trunfio-Sfarghiu	14.15 - 14.30	
3	1-08	**Evaluating lubricant performance by 3D profilometry of wear scars** C Georgescu, L Deleanu, C Pirvu	14.30 - 14.45	
4	1-10	**Fractal analysis of surface micro-topography for a rolled anisotropic thick sheet of aluminium alloy (AA2024-T351)** E Pirva, A Tudor, A Gavrus	14.45 - 15.00	
5	1-17	**Determining the functional and material properties needed for abrasive wear prediction** I Petre	15.00 - 15.15	
6	1-47	**In-plane permeability variation with porosity for soft textile materials: experiment and theory** P Turtoi, T Cicone, A Fatu	15.15 - 15.30	

COFFEE BREAK: 15.45 – 16.15

Session ACME-01-04: Tribology

Thursday, 9 June, 2016

Chairmen: *Prof. Corina BÎRLEANU* and *M.C. Ana-Maria TRUNFIO-Sfarghiu*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-04	**Analysis on temperature effect on the mechanical and tribological properties of titanium nitride thin films** V V Merie, C Bîrleanu, M S Pustan, G Negrea, I M Pintea	16.15 - 16.30	103
2	1-05	**The influence of substrate temperature on the tribo-mechanical properties of chromium nitride thin films** V V Merie, G Negrea, E Modi	16.30 - 16.45	
3	1-12	**Temperature effect on the mechanical properties of gold nano films with different thickness** C Birleanu, M Pustan, V Merie, R Müller, R Voicu, A Baracu, S Craciun	16.45 - 17.00	
4	1-13	**Effect of geometrical dimensions on the tribomechanical response of a gold micromembrane with bent beam hinges** M Pustan, C Dudescu, C Birleanu, F Rusu, R Chiorean, S Craciun	17.00 - 17.15	
5	1-18	**Adhesion analysis for chromium nitride thin films deposited by reactive magnetron sputtering** F M Rusu, V V Merie, I M Pintea, A Molea	17.15 - 17.30	
6	1-11	**Determination of the coefficient of friction using spinning motion** S Alaci, F C Ciornei, C Filote, I C Romanu, C P Nastaca	17.30 - 17.45	
7	1-32	**A simple solution for evaluation of lubricants anti-wear properties** I C Românu, I Muscă, N Couțun, A Juravle	17.45 - 18.00	

Session ACME-01-05: Tribology

Friday, 10 June, 2016

Chairmen: *Prof. Dumitru Olaru* and *Prof. Stelian ALACI*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-36	**Friction torque in thrust ball bearings grease lubricated** G Ianuș, A C Dumitrașcu, V Cârlescu, D Olaru	09.30 - 09.45	**103**
2	1-41	**Influence of the cage on friction torque in low loaded thrust ball bearing operating in dry conditions** D Olaru, M R Balan, A Tufescu	09.45 - 10.00	
3	1-38	**Preliminary experimental research on friction characteristics of a thick gravitational casted babbit layer on steel substrate** V Paleu, S Georgescu, C Baciu, B Istrate	10.00 - 10.15	
4	1-46	**Kinematics and tribological problems in four point contact linear guidances** A Popescu, D Olaru	10.15 - 10.30	

Session ACME-01-06: Materials and Surface Engineering

Thursday, 9 June, 2016

Chairmen: *Prof. Constantin BACIU* and *Prof. Corneliu MUNTEANU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	1-16	**Nondestructive evaluation of the interface between ceramic coating and stainless steel by electromagnetic method** A Savin, R Steigmann, N Iftimie, F Novy, P Vizureanu, M L Craus, S Fintova	14.00 - 14.15	012
2	1-21	**Metallic materials for mechanical damping capacity applications** R C Crăciun, S Stanciu, R Cimpoeșu, A I (Dragoș) Ursanu, V Manole, P Paraschiv, D L Chicet	14.15 - 14.30	
3	1-22	**Dynamic mechanical analyze of superelastic CuMnAl shape memory alloy** A I (Dragoș) Ursanu, S Stanciu, B Pricop, F Săndulache, N Cimpoeșu	14.30 - 14.45	
4	1-29	**Microstructural analysis of biodegradable Mg-0,9Ca-1,2Zr alloy** B Istrate, C Munteanu, V Geanta, S Baltatu, S Focsaneanu, K Earar	14.45 - 15.00	
5	1-33	**Corrosion behavior aspects of Ni-base self-fluxing coatings** C Paulin, D Chicet, B Istrate, M Panțuru, C Munteanu	15.00 - 15.15	
6	1-34	**Correlation of mechanical properties with the acoustic properties in case of an experimental white cast iron** A Gîrneț, S Stanciu, D Chicet, M Axinte, V Goanță	15.15 - 15.30	
7	1-35	**Wear aspects of internal combustion engine valves** M Panțuru, D Chicet, C Paulin, A Alexandru, C Munteanu	15.30 - 15.45	
8	1-37	**Studies regarding the effect of thermal cycling on some experimental high alloyed steels for hot-working** C G Adoroaei, E Enculescu, S Stanciu, M Axinte, D L Chicet	15.45 - 16.00	

Session ACME-02-01: Mechatronics. CAD. Mechanical Vibrations

Thursday, 9 June, 2016

Chairmen: *Prof. Vistrian MĂTIEŞ* and *Prof. Carmen BUJOREANU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	2-02	**Planning and leading of the technological processes by mechanical working with Microsoft project** I Nae, N Grigore	14.00 - 14.15	M4
2	2-21	**Method for designing and controlling compliant gripper** A R Spanu, D Besnea, M Avram, R Ciobanu	14.15 - 14.30	
3	2-22	**Study on laser welding of stainless steel/copper dissimilar materials** D Besnea, O Dontu, M Avram, A Spânu, C Rizescu, T Pascu	14.30 - 14.45	
4	2-06	**Shoulder-elbow exoskeleton as rehabilitation exerciser** A Ianosi-Andreeva-Dimitrova, S Noveanu, O M Tătar, D S Mândru	14.45 - 15.00	
5	2-13	**Specific issues of the design for the elderly** S B Sebesi, H L Groza, A Ianoși-Andreeva-Dimitrova, D Mândru	15.00 - 15.15	
6	2-23	**Issues to be considered on obtaining plant models for formal verification purposes** R Pacheco, L Gonzalez, M Intriago, J Machado, G Prisacaru, D Olaru	15.15 - 15.30	
7	2-16	**Experimental study on HVAC sound parameters** C Bujoreanu, M Benchea	15.30 - 15.45	

COFFEE BREAK: 15.45 – 16.15

Session ACME-02-02: Mechatronics. CAD. Mechanical Vibrations

Thursday, 9 June, 2016

Chairmen: *Prof. Jose MACHADO* and *Prof. Gheorghe PRISĂCARU*

No.	ACME code	Title of the papers and authors	Hours	Room
1.	2-09	**Prediction of induced vibrations for a passenger-car ferry** L Crudu, O Neculet, O Marcu	16.15 - 16.30	M4
2.	2-14	**The National Mechatronic Platform. The basis of the educational programs in the knowledge society** V Mătieş	16.30 - 16.45	
3.	2-18	**Integrative platform based on the mechatronics model for educational technologies focused on competence** I Vlașin, S Greta, L Dache, V Mătieș	16.45 - 17.00	
4.	2-16A	**Preliminary analysis of turbochargers rotors dynamic behaviour** R Monoranu, C Ştirbu, C Bujoreanu	17.00 - 17.15	
5.	2-17	**Impact of maintenance in the automotive field. Experimental study of mechanical vibration** O I Vulcu, M Arghir	17.15 - 17.30	
6.	2-26	**Electromechanical response of silicone dielectric elastomers** V Cârlescu, G Prisăcaru, D Olaru	17.30 - 17.45	
7.	2-28	**Experimental determination of the young's modulus for the fingers with application in prehension systems of small cylindrical objects** C Oprisan, V Cârlescu, A Barnea, G Prisăcaru, D N Olaru	17.45 - 18.00	

Session ACME-02-03: Mechatronics. CAD. Mechanical Vibrations

Friday, 10 June, 2016

Chairmen: *Prof. Mihai AVRAM* and *Prof. Cristel ŞTIRBU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	2-27	**Multiple criteria analysis of remotely piloted aircraft systems for monitoring the crops vegetation status** L Cristea, M C Luculescu, S C Zamfira, A L Boer, S Pop	09.00 - 09.15	**110**
2	2-03	**Researches regarding a pressure pulse generator as a segment of model for a weighing in motion system** I Mardare, I Tiţa, R I Pelin	09.15 - 09.30	
3	2-04	**Hardware structures of hydronic systems for speed control** M Avram, A Spânu, C Bucşan, D Besnea	09.30 - 09.45	
4	2-20	**Theoretical analysis of a pressure setting and control system with PWM direction control valve** M Avram, D Duminică, L A Cartal	09.45 - 10.00	
5	2-25	**Evaluation and geometrical measurements of the human eye for designing the contact lens** T A Pascu, D Besnea, V Constantin, A Spanu, R Ciobanu	10.00 - 10.15	
6	2-07	**About one method for life time estimation of a bucket wheel machine for coal moving** Fl Vîlceanu, C Iancu	10.15 - 10.30	
7	2-12	**Mechatronic demonstrator for testing sensors to be used in mobile robotics functioning on the inverted pendulum concept** L Sandru, V Dolga, C Moldovan, D Savu	10.30 - 10.45	
8	2-19	**General KBE model with inheritance and multi CAD support** T L Tiuca, C Rusu, S Noveanu, D Mandru	10.45 - 11.00	
9	2-08	**Modern evaluation of patents** V Ignat	11.00 - 11.15	

Session ACME-03-01: Theory of Mechanisms and Machinery

Thursday, 9 June, 2016

Chairmen: *Prof. Cezar DUCA, Prof. Virgil ATANASIU* and *Prof. Stelian ALACI*

No.	ACME code	Title of the papers and authors	Hours	Room
1	3-01	**Adaptability of solar energy conversion systems on ships** I Visa, A Cotorcea, M Neagoe, M Moldovan	14.00 - 14.15	TMR-15
2	3-02	**Two degrees of freedom parallel linkage to track solar thermal platforms installed on ships** I Visa, A Cotorcea, M Moldovan, M Neagoe	14.15 - 14.30	
3	3-07	**The singularities, forces transmission index and mechanism self-blocking** C Duca, F Buium	14.30 - 14.45	
4	3-08	**The 033(6R) structural group existence condition in real field** C Duca, F Buium	14.45 - 15.00	
5	3-04	**Considerations upon applying tripodic coupling in artificial hip joint** S Alaci, M C Ciornei, C Filote, F C Ciornei, M C Gradinariu	15.00 - 15.15	
6	3-16	**Selection criteria of the addendum modification coefficients of spur gear pairs with smaller number of pinion teeth** V Atanasiu, C Oprişan, D Leohchi	15.15 - 15.30	
7	3-13	**Experimental analysis of the self-erection mechanism of the self-erecting cranes** Dima, C Francu	15.30 - 15.45	
8	3-14	**Modeling and precision of the localization of the robotic mobile platforms for constructions with laser tracker and smart track sensor** M. Dima, C Francu	16.15 - 16.30	
9	3-06	**Generation of noncircular gears for variable motion of the crank-slider mechanism** M Niculescu, L Andrei, A Cristescu	16.30 - 16.45	
10	3-19	**Biomimetics of throwing at basketball** E Merticaru, E Budescu, R M Iacob	16.45 - 17.00	

COFFEE BREAK: 15.45 – 16.15

Session ACME-03-02: Robotics

Thursday, 9 June, 2016

Chairmen: *Prof. Cezar OPRIŞAN* and *Prof. Ioan DOROFTEI*

No.	ACME code	Title of the papers and authors	Hours	Room
1	3-05	**A KBE tool for solving the mechanisms kinematics** C Rusu, T L Tiuca, S Noveanu, D Mandru	14.00 - 14.15	TMR-11
2	3-17	**Linkages for quadruped bio-robot legs** O Antonescu, C Robu, P Antonescu	14.15 - 14.30	
3	3-20	**Some experimental results on Coanda effect with application to a flying vehicle** O Crivoi, I Doroftei	14.30 - 14.45	
4	3-12	**Dimensional synthesis of a leg mechanism** F Pop, E-Ch Lovasz, C Pop, V Dolga	14.45 - 15.00	
5	3-21	**Analysis of an ankle rehabilitation system based on a scotch-yoke mechanism** C Racu (Cazacu), I Doroftei	15.00 - 15.15	
6	3-18	**About shapes of the 2nd type singularity curves of a 3-RRR planar mechanism** F Buium, C Duca, I Doroftei, D Leohchi	15.15 - 15.30	
7	3-22	**Some theoretical and experimental results on a social robot** I Doroftei, F Adascalitei, D Lefeber, B Vanderborght	15.30 - 15.45	

Session ACME-04-01: Mechanics of Deformable Bodies

Thursday, 9 June, 2016

Chairmen: *Prof. Ioan CURTU* and *Prof. Costică ATANASIU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	4-01	**Numerical and experimental study of cruciform specimens subjected to biaxial tensile test** L Andruşcă, V Goanţă, P D Bârsănescu, R Steigmann	14.00 - 14.15	**Faculty Council Room**
2	4-02	**Experimental characterization of materials subjected to combined loading conditions** L Andruşcă, V Goanţă, P D Bârsănescu, A Savin	14.15 - 14.30	
3	4-10	**Study on mechanics of bodies under the action of sound pollution in industrial halls. I: Setting away from local sources** I Lăpuşan, M Arghir	14.30 - 14.45	
4	4-03	**Study on mechanics of bodies under the action of sound pollution in industrial halls. Part II: Analysis of sound pressure inside the hall** M Arghir, I Lăpuşan	14.45 - 15.00	
5	4-04	**Displacements and stresses in bending of circular perforated plate** C Atanasiu, St Sorohan	15.00 - 15.15	
6	4-06	**Moored offshore structures – evaluation of forces in elastic mooring lines** L Crudu, D C Obreja, O Marcu	15.15 - 15.30	
7	4-15	**Comparison between viscous elastic plastic behavior of composites reinforced with plain glass fabric and chopped strand mat** M Stanciu, A Harapu, H Teodorescu, Drăghicescu, I Curtu, A Savin	15.30 - 15.45	

COFFEE BREAK: 15.45 – 16.15

Session ACME-04-02: Mechanics of Deformable Bodies

Thursday, 9 June, 2016

Chairmen: *Prof. Ioan CURTU* and *Prof. Costică ATANASIU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	4-11	**A model for evaluating the ballistic resistance of stratified packs** C Pirvu, C Georgescu, S Badea, L Deleanu	16.15 - 16.30	**Faculty Council Room**
2	4-12	**Ballistic tests on packs made of stratified aramid fabrics LFT SB1** C Pirvu, L Deleanu, C Lazaroaie	16.30 - 16.45	
3	4-05	**Investigation of limit state criteria for amorphous metals** A M Comănici, A Sandovici, P D Bârsănescu	16.45 - 17.00	
4	4-07	**The influence of accidentally appeared stress raisers, on the components lifetime duration** V Goanţă, M. Mareş, T. Axinte	17.00 - 17.15	
5	4-08	**The stress raisers effects on the materials mechanical characteristics, analyzed by local microhardness measurements** V Goanţă, M. Mareş, T. Axinte	17.15 - 17.30	
6	4-16	**Fast and robust Matlab-based finite element model used in the layup optimization of composite laminates** A Şerban	17.30 - 17.45	
7	4-17	**Time optimal trajectory generation from polyline with velocity, acceleration and spatial deviation constraints** A Şerban	17.45 - 18.00	
8	4-09	**Patent and product piracy** V Ignat	18.00 - 18.15	
9	4-13	**The comparative analitical (energy method) and numerical study for the circular plates with ribs** C Popa, C Marin, A Negrea, G Tomescu	18.15 - 18.30	
10	4-14	**The comparative study for the isotropic and orthotropic circular plates** C Popa, G Tomescu	18.30 - 18.45	

Session ACME-05-01: Automotives. Engine and Transmission.
Road Safety

Thursday, 9 June, 2016

Chairmen: *Prof. Eugen GOLGOTIU* and *Prof. Adrian SACHELARIE*

No.	ACME code	Title of the papers and authors	Hours	Room
1	5-01	**Aspects of the passenger airbag E.C.U. location** A. Soica	14.00 - 14.15	**Propul-sion Systems Lab**
2	5-12	**Internal combustion engine with thermochemical recuperation fed by ethanol steam reforming products – feasibility study** O Cesana, M Gutman, M Shapiro, L Tartakovsky	14.15 - 14.30	
3	5-04	**The influence of the current intensity on the damping characteristics for a magneto-rheological damper of passenger car** Al Dobre, Cr N Andreescu, C Stan	14.30 - 14.45	
4	5-02	**Method of preventing unwanted traffic in the ”Tudor Vladimirescu” university campus** A I Dontu, Al Maftei, P D Barsanescu , A Sachelarie, B Budeanu	14.45 - 15.00	
5	5-03	**Method of creating additional parking spaces in the “Tudor Vladimirescu” university campus** A Maftei , A I Dontu, A Sachelarie , B Budeanu	15.00 - 15.15	
6	5-26	**Contributions to modeling functionality of a high frequency damper system** E A Sirbu, S Horga, G Vrabioiu	15.15 - 15.30	
7	5-24	**Practical Method for estimating road curvatures using onboard GPS and IMU equipment** S Zamfir, R Drosescu, R Gaiginschi	15.30 - 15.45	
8	5-22	**The analysis of experimental data obtained from automotives tests** R M Stoica, V J Radulescu, D Neagu, C Trocan, I Copae	15.45 – 16.00	

COFFEE BREAK: 16.00 – 16.30

Session ACME-05-02: Automotives. Engine and Transmission. Road Safety

Thursday, 9 June, 2016

Chairmen: *Prof. Eugen GOLGOTIU* and *Prof. Adrian SACHELARIE*

No.	ACME code	Title of the papers and authors	Hours	Room
1	5-23	**The virtual morphology and the main movements of the human neck simulations used for car crash studies** St Ciunel, B Tica	16.30 - 16.45	**Propul-sion Systems Lab**
2	5-14	**Wheel-rail dynamic forces induced by random vertical track irregularities** M A Spiroiu	16.45 - 17.00	
3	5-13	**Upon an issue of correlation between the running speed of vehicles and traffic capacity of a road section** L Gaiginschi, I Agape	17.00 - 17.15	
4	5-25	**Over compression influence to the performances of the spark ignition engines** E Rakosi, S G Talif G Manolache	17.15 - 17.30	
5	5-05	**The influence of the biofuel blends on the energetic and ecological performances of the Diesel engine** B C Benea	17.30 - 17.45	

Session ACME-05-03: Automotives. Engine and Transmission.

Road Safety

Friday, 10 June, 2016

Chairmen: *Prof. Radu GAIGINSCHI* and *Prof. Nicolae ISPAS*

No.	ACME code	Title of the papers and authors	Hours	Room
1	5-09	**Experimental investigations of the hydrogen addition effects on diesel engine performance** I Mirica, C Pana, N Negurescu, A Cernat, N C Nutu	09.00 - 09.15	**Propul-sion Systems Lab**
2	5-17	**Dual fuel diesel engine operation using LPG** I Mirica, C Pana, N Negurescu, A Cernat, N C Nutu	09.15 - 09.30	
3	5-08	**Study of the opportunities of analytical determination of the origin-destination flows in roundabout intersections based on data provided by fixed observers** E Neagu, A A Boroiu, V Rizea, A Boroiu	09.30 - 09.45	
4	5-20	**Study on the engine oil's wear based on the flash point** R Niculescu, V Iorga-Simăn, A Trică, A Clenci	09.45 - 10.00	
5	5-11	**An assessment of combustion products of spark ignition engines supplied by ethanol – gasoline blends** K Uzuneanu, E Golgotiu	10.00 - 10.15	
6	5-16	**Impact of air conditioning system operation on increasing gases emissions from automobile** S M Burciu, G Coman	10.15 - 10.30	

COFFEE BREAK: 10.30 – 11.00

Session ACME-05-04: Automotives. Engine and Transmission.

Road Safety

Friday, 10 June, 2016

Chairmen: *Prof. Radu GAIGINSCHI* and *Prof. Nicolae ISPAS*

No.	ACME code	Title of the papers and authors	Hours	Room
1	5-06	**The influence of thermal regime on gasoline direct injection engine performance and emissions** C I Leahu, S Tarulescu	11.00 - 11.15	**Propul-sion Systems Lab**
2	5-10	**About the preliminary design of the suspension spring and shock absorber** I. Preda	11.15 - 11.30	
3	5-18	**Study concerning the loads over driver's chests in car crashes with cars of the same or different generation** N Ispas, M Năstăsoiu	11.30 - 11.45	
4	5-19	**Urban planning and traffic safety at night** N Ispas, D Trusca	11.45 - 12.00	
5	5-21	**Energy recovery for a road vehicle** R Tarulescu	12.00 - 12.15	
6	5-15	**Influence of the drawbar pull over the power flux within the automotive transmissions** M Truţă, M Marinescu, V Vînturiş	12.15 - 12.30	

Session ACME-06-01: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Thursday, 9 June, 2016

Chairmen: *Prof. Gheorghe DUMITRAŞCU* and *Prof. Bogdan HORBANIUC*

No.	ACME code	Title of the papers and authors	Hours	Room
1	6-05	**Waste cooking oil as source for renewable fuel in Romania** F Um Min Allah, G Alexandru	14.00 - 14.15	**Aristotel Renew-able Energy Lab**
2	6-07	**Numerical investigation of entropy generation in micro-channels heat sink with different shapes** A A Alfaryjat, D Stanciu, A Dobrovicescu, V Badescu, M Aldhaidhawi	14.15 - 14.30	
3	6-11	**Performance and emission of generator diesel engine using methyl esters of palm oil and diesel blends at different compression ratio** M Aldhaidhawi, R Chiriac, V Bădescu, H Pop, V Apostol, A Dobrovicescu , M Prisecaru, A A Alfaryjat, M Ghilvacs, A Alexandru	14.30 - 14.45	
4	6-19	**Simulated thermal energy demand and actual energy consumption in refurbished and non-refurbished buildings** C A Ilie, I Visa, A Duta	14.45 - 15.00	
5	6-16	**Thermodynamic analysis of geothermal heat pump** G Dumitraşcu, A Dumencu, B Horbaniuc	15.00 - 15.15	
6	6-18	**SWOT analysis of the renewable energy sources in Romania – Case study: Solar energy** A G Lupu, A Dumencu, M V Atanasiu, C E Panaite, G Dumitraşcu, A Popescu	15.15 - 15.30	
7	6-14	**Study of a two-dimension transient heat propagation in cylindrical coordinates by means of two finite difference methods** A Dumencu, B Horbaniuc, G Dumitraşcu	15.30 - 15.45	

COFFEE BREAK: 15.45 – 16.15

Session ACME-06-02: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Thursday, 9 June, 2016

Chairmen: *Prof. Vlad-Mario HOMUTESCU* and *Prof. Dan-Teodor BĂLĂNESCU*

No.	ACME code	Title of the papers and authors	Hours	Room
1	6-08	**Determination of mechanical properties of some glass fiber reinforced plastics suitable to wind turbine blade construction** R Steigmann, A Savin, V Goanta, P D Barsanescu, B Leitoiu, N Iftimie, M D Stanciu, I Curtu	16.15 - 16.30	**Aristotel Renew-able Energy Lab**
2	6-03	**Air turbine – an interesting solution for straw energy conversion into electricity** D T Bălănescu, V M Homutescu, M V Atanasiu	16.30 - 16.45	
3	6-04	**Dimensional approach on hot air turbine power plant in opened cycle for straw recycling** D T Bălănescu, V M Homutescu, M V Atanasiu	16.45 - 17.00	
4	6-13	**Variable displacement alpha-type Stirling engine** V M Homutescu, D T Bălănescu, C E Panaite, M V Atanasiu	17.00 - 17.15	
Continues with section 07-01				

Session ACME-06-03: Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems

Friday, 10 June 2016
Chairmen: *Prof. Aristotel POPESCU* and *Prof. Carmen-Ema PANAITE*

No.	ACME code	Title of the papers and authors	Hours	Room
1	6-17	**Concepts and fundamental equations in thermodynamics with finite speed. I. Equations of irreversible processes with finite speed** S Petrescu, B Borcila, M Costea, E Banches, G Popescu, N Boriaru, C Stanciu, C Dobre	09.00 - 09.15	**Aristotel Renew-able Energy Lab**
2	6-01	**Comfort air temperature influence on heating and cooling loads of a residential building** C Stanciu, I Șoriga, A T Gheorghian, D Stanciu	09.15 - 09.30	
3	6-02	**Analysis of a flat plate collector for hot water domestic use – A sensitivity study** C. Stanciu, D. Stanciu, A. Gheorghian, I. Şoriga	09.30 - 09.45	
4	6-10	**Performance analysis of exhaust heat recovery using organic Rankine cycle in a passenger car with a compression ignition engine** M Ghilvacs, T Prisecaru, H Pop, V Apostol, M Prisecaru, E Pop, Gh Popescu, C Ciobanu, A Mohanad, A Alexandru	09.45 - 10.00	

Session ACME-07-01: Technologies in Agriculture and Food Processing

Thursday, 9 June, 2016

Chairmen: *Prof. Pedro Silva GIRAO* and *Prof. Ioan BĂISAN*

No.	ACME code	Title of the papers and authors	Hours	Room
1	7-01	**Smart agriculture based on wireless sensors networks** P S Girao	17.15 - 17.30	**Aristotel Renew-able Energy Lab**
2	7-02	**The study behavior of food materials with soft texture subjected to shredding by cutting** M Panaite-Lehăduş, C Olaru, V Nedeff, I Olaru, E Moșneguțu	17.30 - 17.45	
3	7-03	**Determination of kinematic indices corresponding to a solid particle on a flat oscillating surface** E Mosnegutu, V Nedeff, O Bontas, N Barsan, D Chitimus, D Rusu	17.45 - 18.00	

ACME Poster Session

Thursday, 9 June, 2016

ACME code	Title of the papers and authors	Hours	Room
1-02	**Study on the friction in steel/polyamide ball on disk type contacts** M T Lates, C C Gavrila, R Papuc	14.00 - 18.00	**IMMR Dept.** **1st floor**
1-03	**Sliding friction study of the oscillating translational motion for steel on PA66 and PA46 type materials** M T Lates, R G Velicu, R Papuc		
1-07	**Contact point of bush – sprocket tooth depending on pitch differences of bush chain transmissions** R Velicu, R Saulescu, L Jurj		
1-20	**Some aspects over the quality of thin films deposited on special steels used in hydraulic blades** C A Tugui, P Vizureanu, N Iftimie, R Steigmann		
1-23	**Imbibition of liquids in fibrous porous media** I C Melciu, M D Pascovici		
1-28	**Geometry and kinematics of the plate on disk contact type influencing friction measurements on UMT tribometer** R Velicu, S Bobancu, S Popa		
2-10	**Using the rear projection of the Socibot Desktop robot for creation of applications with facial expressions** G Gîlcă, N G Bîzdoacă, I Diaconu		
2-15	**Machining operations using Yamaha YK 400 robot** A Pop, A Pop, D Savu, V Dolga		
3-03	**Parametric optimization in virtual prototyping environment of the control device for a robotic system used in thin layers deposition** M L Enescu (Balas), C Alexandru		
3-09	**Development of an in pipe inspection minirobot** M O Tătar, A Pop		
3-10	**Performance analysis of a novel planetary speed increaser used in single-rotor wind turbines with counter-rotating electric generator** R Saulescu, M Neagoe, O Munteanu, N Cretescu		
3-11	**Improving the energy performance of wind turbines implemented in the built environment using counter rotating planetary transmissions** R Saulescu, M Neagoe, C Jaliu		
6-06	**Analysis of the heat transfer in double and triple concentric tube heat exchangers** S Rădulescu, L I Negoiţă, I Onuţu		
6-12	**Step tracking program for concentrator solar collectors** D Ciobanu, C Jaliu		

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TOPICS:

- Machine Design. Tribology. Materials and Surface Engineering (Section 1);
- Mechatronics. CAD. Mechanical Vibrations. (Section 2);
- Theory of Mechanisms and Machinery. Robotics (Section 3);
- Mechanics of Deformable Bodies (Section 4);
- Automotives. Engine and Transmission. Road Safety (Section 5);
- Applied Thermodynamics, Heat Transfer, and Renewable Energy. Thermal Systems (Section 6);
- Technologies in Agriculture and Food Processing (Section 7);

ADVANCED CONCEPTS in MECHANICAL ENGINEEERING

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